

Completed Pollution Prevention Project Case Study

United States Department of Energy
Office of Environmental Management
Fact Sheet

High Explosive Oil Reduction

Los Alamos National Laboratory

Original Problem

The machine shop at ESA Division processes high explosives components. Oil is used to lubricate the machinery, and water is used to cool the machining process. In the past, the tiny chips coated with trace high explosives that are generated during the machining process would mix with the oil and water, creating a hazardous waste stream that had to be incinerated.

The Project Solution

The machine tools were customized with shielding that prevents the chips from mixing with the oil. After extensive testing, employees at ESA Division determined that the lubricating oil was no longer being contaminated with chips, and the oil could be sent to a recycler instead of an incinerator.

Value of Improvement

The shielding was easy and inexpensive to install on the machine tools. Between 250 and 330 gallons of oil are now recycled instead of incinerated as hazardous waste every year, saving approximately \$2000 annually.



DOE Monetary Benefits

Total Project Cost	NA
Lifecycle Savings	~\$2000 / year
Return on Investment	NA

Lifecycle Waste Reduction

Lifecycle Waste Reduction	250-330 gal. oil / year
Commencement Date	2000
Project Useful Life (Years)	Indefinite

Benefits At-A-Glance

- Adding shielding to the machine tools prevents chips with trace high explosives from mixing with the lubricating oil.
- The clean oil can be recycled, but the contaminated oil had to be incinerated.
- Saves about \$2000 and prevents the generation of 250-330 gallons of hazardous waste annually.

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Summary Data	
Priority Area:	Waste Minimization Projects
Project Type:	Source Reduction
Total Project Cost:	NA
Lifecycle Savings:	~\$2000 per year
Implementing Group:	ESA-WMM / ESA-FM
Benefiting Group:	ESA-WMM
Useful Life Years:	Indefinite
Return on Investment:	NA
Lifecycle Waste Reduction:	250 - 330 gallons of oil / year
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